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AUTHOR Becker, Stephen P.
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ABSTRACT

A study was made using behavioral-science knowledge and educational technology to reduce the problem of lost and damaged freight at the St. Johnsbury Trucking Company, Cambridge, Massachusetts. This case study utilized the concept of force field analysis. The concept involved unfreezing a specific set of circumstances in the organization, moving to a new level of well-being in the organization, and then refreezing the organization at this new level of well-being. The key to the success of the program was high-quality training for non-specialists in the function and technology of the specialist which resulted in changing attitudes and perceptions about the need for preventative measures. From this program four major behavioral-science learnings were discovered: (1) to achieve a complex objective, it takes a whole series of training programs aimed at the same objective over a long period of time; (2) training alone cannot do the job, there must be support systems and clear performance goals; (3) the company never had a claims problem; instead, it had inefficient operations due to lack of management knowledge, commitment, and skill; and finally, (4) it is vital that the change agent be personally successful in the process. (WCM)

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THE DEVELOPMENT OF INSTRUCTIONAL DESIGN AND ORGANIZATIONAL PERFORMANCE TO ACHIEVE PROFIT-ORIENTED OBJECTIVES

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STEPHEN P. BECKER, DIRECTOR OF TRAINING, ST. JOHNSBURY TRUCKING CO., INC.
40 ERIE STREET, CAMBRIDGE, MASSACHUSETTS

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CASE STUDY

St. Johnsbury Trucki ng Co. in 1970 was experiencing a problem with lost and damaged freight. Since this problem represented 3 1/2% of the Company's total revenue, the company established a profit-oriented objective. It was to reduce the cost of claims to 1% or less of the Company's total revenue. This was a clear objective and was specified as an assignment to the Training Department. That is, the Training Department should use its behavioral science knowledge and educational technology as the Company's leading force in achieving this organizational objective.

The Company at that time was grossing $36, 000, 000 in revenue. It was decentralized having 29 physical truck ing terminals in 10 states in the northeast. There were 2, 200 employees, about 250 of whom were salaried. The Company was listed on the American Stock Exchange and had been in business for 51 years.

The task of the Training Department was to design a system for change so that the organization, which is people dependent, i. e., has no assembly line, mechanical technology, or research and development technology, could achieve this organizational goal of a claims ratio which would be 1% or less of revenue.

The Training Department at that time was newly established and the Director of Training joined the Company (from outside) in May of 1970. He reported directly to the Company's President who was personally very interested in reducing the cost of claims as a way to increase profits.

What course of action would you recommend?

DESIGNING A SYSTEM FOR CHANGE

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In order to talk about developing a system for change to meet specific profit and performance objectives it makes sense to review what happened utilizing Curt Lewins' concept of force field analysis. Essentially this concept involves unfreezing a specific set of circumstances in the organization; moving to a new level of well-being or improving the organization; and then refreezing the organization at this new level of well-being. What this paper will attempt to do will be to identify the forces in each of these sections and to explain how they relate to the corporation and its problem of reducing cargo claims.

UNFREEZING

There were both negative and positive forces working to hinder and help the unfreezing process. Looking at these with hindsight let's consider the negative forces first.

NEGATIVE FORCES

1. The first negative force preventing unfreezing was that many people in the corporation were not aware the claims problem existed. They had absolutely no information indicating that the Company had a claims problem at all. Everybody knew that claims existed but felt that for a freight moving company, claims was an expected and normal part of doing business.
2. A second negative force was that there was no notion of preventing claims. There is a job known as OS&D. This means, overage, shortage and damage clerk whose job it is to adjust and correct things after they go wrong. In other words, if you have 10 television sets but the customer says that you were supposed to deliver 12 to him, what happened to the other 2. When you have millions and millions of tons of freight moving around 10 states in over 2, 000 vehicles, finding those two cartons is not an easy task. The point was that there was no interest or notion about preventing such problems in the first place. All of the emphasis was on correction.

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3. The OS&D function and the people who occupied those jobs had very little status in the Company. It was felt by the operations personnel that the function of OS&D and claims prevention was simply not important enough to take up their time.
4. When key people in the Company were asked what the Training Department could do they said, "well, probably a training program for OS&D clerks would be useful but it really can't be done." The only way to learn that job is to have experience doing it for about a year and a half.
5. An additional negative force was that many procedures that could have been used for claims prevention were simply not being followed. For instance, men who load and unload trucks are responsible to sign control documents indicating what they have done. This was not happening. The emphasis was simply on loading the trailers and getting them going as quickly as possible.
6. There was no concept that the supervisor should be a manager. He was simply a freight coordinator. He decided which doors the trucks would be backed into to receive freight and which freight should be loaded on to which trucks. At the terminal level there was no notion about him managing his people properly even though the corporation spends 70% of all its dollars on wages and salaries of its employees.
7. There were other forms and procedures which were inadequate in providing information for management decision-making. The filing systems are one example. They were different from terminal to terminal. Since one terminal picks up the freight and another delivers it, uniformity of information is important.

POSITIVE FORCES

1. One of the most important things was that top management, including the President of the Company, understood the problem and the effect of the claims cost on profitability and wanted very badly to achieve the 1% goal.
2. In addition, the people in the Training Department had a very strong personal need to succeed and achieve this goal since Training was a new Department and reducing the claims cost was in reality the first assignment. It was almost a matter of survival providing a very high task orientation to the individuals working on the project.

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3. Another positive force was that 3 1/2% of $36, 000, 000 represents the cost of $1, 260, 000. The objective was to reduce that amount to $360, 000. In a sense then, the Company was saying that it wanted to spend $360, 000 in paying claims. The net difference, of course, is $900, 000 which was available to be saved in that year alone. This meant that one of the positive forces was the availability to spend some serious money on developing a solution. Theoretically if you spent $800, 000 in solving the problem, you would come out ahead $100, 000.
4. Another positive force that was controlling lost and damaged freight for a freight company is an essential part of the business. If this cost could be brought under control, our solution would have long term benefits for the corporation.

These then were the forces positive and negative effecting the unfreezing system. In reality the unfreezing did not take place until the improvement programs or change process was implemented. As the change process started to work, the organization started to dynamically unfreeze and move to a new level of well-being. Let's examine the change system which was implemented.

IMPROVING (CHANGING) THE ORGANIZATION

NEGATIVE FORCES

1. In looking at the negative side or the negative forces of Lewin's second dimension, time must be cited. Because of limited training staff and because limited knowledge about the value of training in the organization, the task of designing and implementing the improvement systems took much longer than would have been the case if the staffing had been adequate. Part of what took up the time was simply the preparation of training materials once various training programs were decided upon. Another thing which ate up much time was that many new systems and procedures aside from training had to be designed and implemented before people could be trained in their use. It took time to design and clarify these new systems and procedures so that everybody who was

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in a responsible, influential, decision-making position agreed upon them.

2. Another negative force was that there was high supervisory turn-over at this time and as soon as we got done explaining new systems-procedures to people they were gone and somebody else was in their place.
3. The last negative force was that there was new top management in the organization not including the President. They were new in the sense that they had been promoted from lower level jobs rather than being new to the freight business and they were still groping to get comfortable in their new jobs. They were only willing to make a tentative commitment to the training and change development process.

POSITIVE FORCES

Some of the positive forces that were "created" were a series of training programs. Other created forces were not training but rather support and implementation systems as follows:

1. Two new jobs were created in the Company. That is, two claims' prevention managers were appointed and reported to the Director of Operations. The criteria for a person getting into this job was that he be an operating manager. It took several months to realize that in reality the Company did not have a claims problem. Rather it had an operational problem. The operation was not as efficient as it should have been and therefore shortages and damaged freight were the result. The cause in fact was lack of high quality management.
2. The first thing that was done to correct the claims problem was to give information to people throughout the Company; especially the people who had the ability to prevent the claims in the first place. An audio-visual program was created using synchronized cassette/slide and presented in about half-hour sessions to all management and clerical people in the corporation. When that was completed the same program was altered slightly and shown to all drivers and platform workers in the corporation. This had the effect of making people aware there was a problem--it gave numbers and figures--it demonstrated

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ways the problem could be corrected and asked for help in achieving the corporate goal of 1% cost.

3. The second part of the change process was the creation of a two-day corporate seminar. The seminar was given in a central location to heterogeneous groups of 12 people each. The main objective of this seminar was for people to be able to clarify their roles in a complex transportation system; to feel a sense of inter-dependence; to understand that in the freight business every person is a piece of a sequence. That is, if any person does not do his job properly the error magnifies itself as the shipment moves from the shipper to the consignee. The seminar also high-lighted and gave experience with the helping relationship. One of the interesting things that we found out was that almost nobody in middle management or in the clerical ranks really understood the total process of moving a piece of freight from the point where it originates to its destination. In fact, there are over 70 steps in this process. The seminar also covered the steps in processing a claim in terms of the paperwork. People did not realize that to pay a claim for a broken bottle of ketchup cost the Company $40 in overhead expense. This was a startling realization and it began to get people interested in creating change.

4. The last positive force was the creation of a 3-day OS&D institute to reduce the training time of the clerks who expedite problems after they occur. Here the design of the institute is very unique.
The institute started out going against many notions about what a good training program should be. It started out by testing the participants with a 200 question quiz. After people were tested they graded themselves and developed a visual chart of their strengths and weaknesses in terms of their knowledge of the paperwork systems that are used to find missing freight. If a person scored low on any part of the quiz he could study that part of the quiz and re-take a matched test. Therefore, everybody in the class was studying different information and taking additional sub-tests with matched questions. People could select

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the area of their own study--take all the study time they needed and decide when they would be tested. Normally by the end of the first day everybody could correctly answer all 200 questions.

The most important thing we did with this program since we recognized that the problem was one of operations and not claims, was to give the identically same course to the operating supervisors and terminal managers. When they realized the complexity of the OS&D job, many things began to happen in terms of prevention.

The second day of the course consisted of programmed instruction learning on the process of investigation. A text and workbook were created which took 3 months to write and was based on case studies that taught the person how to investigate a shortage problem. The third day consisted of a discussion with a claims prevention manager in the field, using the conference telephone. The discussion revolved around the questions that the class generated that nobody in the room, including the instructor (many times), was able to answer. Even when the instructor could answer the question it was found that the students listened more attentively to a line management person who had a reputation for being expert in the field and who was working on such problems every day of the week. Again, the key with this program was training non-specialists in the function and technology of the specialist and thereby changing attitudes and preceptions about the need for preventative measures.

In addition, the status of the OS&D function rose significantly. The training time for the OS&D clerk was cut from over one year to under three months to produce not just an adequate but rather a competent OS&D investigator.

REFREEZING

NEGATIVE FORCES

1. Historically the culture in the trucking industry has been to concentrate efforts on a single organizational goal and when it is achieved, move on

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to the next one. People who did this normally ignored their first achievement and any improvements that had been gained would be quickly wiped out. Lewin recognized this fact in his work. One of the negative factors influencing the refreezing process was this historic cultural mode and it has been particularly obvious among the supervisors in the Company.

2. Another negative factor was that in someplaces we had problems with the union as we tried to implement some mechanisms for re-freezing the organization at this new level of well-being.
I say new level of well-being because the claims objective of 1% was achieved within a year and a half after the effort started. The current objective (1974) is to get the claims cost to 1/2 of 1%. It is currently levelling around .82% of revenue.
3. Another negative force effecting the refreezing process is still lack of adequate staff to conduct training sessions. Therefore, we have been making more and more use of consultants to create specific programs. Let's look now at the positive forces.

POSITIVE FORCES

1. The first positive force is that there is renewed top management support for the change, especially in light of the $2, 000, 000 which the Company has saved over the last three years. The top management of the Company has determined not to go back to the old level of claims cost. The fact that there was demonstrated and measurable success in achieving the objective is a positive force effecting refreezing.
2. Since the preventative aspects of this problem is now recognized and a group of operational procedures has been defined along with a need for more professional management, the notion of management development is involved in refreezing. We have created a week long workshop for operations managers revolving around management by objectives, productivity, discipline, performance appraisal interviewing, and communication. This program really stresses not only the nature of

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management, but also helps learners develop some personal skills.

3. An additional force for refreezing is that the training for the OS&D clerks and the operations personnel in OS&D procedures will continue indefinitely as new people are added to the corporation.
4. One of the biggest factors in refreezing the Company is an audio-visual based system for training workers and drivers in correct and proper ways to handle freight and paperwork. This is a library of audio-visual programs which has been produced and housed in each of the trucking terminals. The program is implemented by the local supervision which has an effect in closing the gap between labor and management. In addition, if these procedures are stressed, which they have been, then it is expected that the operation will be "tighter" and claims will be less likely to occur. We use the same system for training temporary help during peak periods.
5. There is also a greater effort to select more professional management through the hiring process. Programs of tuition refund and college recruiting have been implemented.
6. The management turnover was significantly lower in 1973 than it was in 1970.
7. Since many of the forms and paper procedures were changed and improved as the Company stressed claims prevention and quick action where problems did occur, many new job requirements have been added. One example is that now anybody hired into the office must have the ability to type. Now, tests are administered to all new applicants for office jobs to assure that they can type and all problems which are encountered regarding the mishandling of freight are now typed where as they used to be handwritten. This simple fact encourages the terminal managers to read these reports and take some action.
8. The Company has an incentive system and when the claims went down salaried people received cash awards for their efforts.

BEHAVIORAL SCIENCE LEARNINGS

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The first major learning that is very important to us is that in order to change an organization, no simple training program can be effective. Rather it takes a whole series of training programs aimed at the same objective over a long period of time (two or three years at least) to achieve a complex objective.

Secondly, training alone cannot do the job. There must be support systems. In St. Johnsbury's case, many documents and paperflow systems were changed or created to aid the management people in taking quick action on any problems that did develop. A third major learning is really not new. It is that what seemed to be the problem in reality was not the problem at all. The Company never had a claims problem. What it had was a problem of inefficient operations due to lack of management knowledge, commitment, and skill. The result of this was high claims which is merely an indicator of the quality of the overall corporation. The fourth major learning was that specialized training given to non-specialists is a very valuable thing in changing perceptions of the non-specialist. The value of this changed perception (in this case) is that it released the motivation of operating managers to take action in preventing claims problems from occurring. In addition, it raised the status of the OS&D clerk. The supervisors, terminal managers, and district managers were put through the identical training that was used to cut the time it took for a person coming in new to the Company to function well as an OS&D clerk. In other words, we trained district managers to be OS&D clerks. When they began to see that it was a difficult job, they placed higher value on that function.

When the operations management and other personnel had information about the cost of claims and how it affected profitability, they placed new value on prevention which forced tighter operations and improved management control.

It is important to realize that the motivation for this came from within the management group. It was not imposed. That is, nobody was fired for not being interested in claims prevention. In reality people began to expect performance from their peers that reflected this interest.

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Another major learning is that the need of the change agent to be personally successful is vital to the process. The personal motivation and the ability to take risks of the trainers and educators is very, very important. A trainer who doesn't care about his work--who isn't committed to creating change really has no place in this business. There was great resistance to overcome in the beginning because many people believed that the objective could not be achieved. Behavioral scientists must make the assumption that they can achieve goals and they can make contributions. They must also realize that it cannot be done by behavioral science alone, there must be support mechanisms and clear performance goals. The philosophical base of the behavioral science function must be proactive rather than reactive. If we had waited for somebody to come and ask us to write a programmed instruction course to train OS&D clerks, we could have done it and gone through all the steps involved in educational technology. However, we would not have created change in the total organization and would really not have achieved any profit-oriented goals. Another suspicion about force field analysis is that training is a very, very vital factor in refreezing and maintaining new levels of organizational well-being. It is much more important in the refreezing process than it is in the unfreezing process. In a sense it is least important in the unfreezing process, gains importance during the change or improvement process, and is critically important in the refreezing process. Refreezing an organization at new levels of well-being, particularly in people-dependent organizations, cannot be done without a high quality training function.

To unfreeze an organization on the other hand and get it moving toward goals may not in fact require training programs or educational technology. The unfreezing process can be initiated with information, awareness, clear goals, and commitment to change. Reward and punishment systems are not enough. They were present at St. Johnsbury for many years since the cost of claims has high impact on the management incentive system. Even though this was true, claims cost had been steadily rising.

The change process requires the development of working systems, procedures, and management skills which are initiated and internalized through the efforts of

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behavioral science.

In refreezing, training programs become essential. It is the way that new learnings and support mechanisms are reinforced. It is also the way that new members of the organization learn organizational expectations and about how those expectations can be realized. If St. Johnsbury stopped all training aimed at claims prevention, it is probable that the cost ratio would begin to rise.

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